

L98 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Structure and properties of block copolymers of polyblock type  
 SO Plasticheskie Massy (1981), (5), 29-32  
 CODEN: PLMSAI; ISSN: 0554-2901  
 AU Rogovina, L. Z.; Valetskii, P. M.; Slonimskii, G. L.  
 AN 1981:408204 HCAPLUS  
 DN 95:8204

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	96.63	96.84
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-0.73	-0.73

STN INTERNATIONAL LOGOFF AT 15:35:25 ON 20 APR 2005

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 11:38:14 ON 21 APR 2005

=> fil .bec

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILES 'MEDLINE, SCISEARCH, LIFESCI, BIOTECHDS, BIOSIS, EMBASE, HCAPLUS, NTIS,  
 ESBIODASE, BIOTECHNO, WPIDS' ENTERED AT 11:38:24 ON 21 APR 2005  
 ALL COPYRIGHTS AND RESTRICTIONS APPLY. SEE HELP USAGETERMS FOR DETAILS.

11 FILES IN THE FILE LIST

=> s polyethylene glycol or peg

FILE 'MEDLINE'  
 33692 POLYETHYLENE  
 22016 GLYCOL  
 9086 POLYETHYLENE GLYCOL  
 (POLYETHYLENE(W) GLYCOL)  
 8964 PEG  
 L1 14758 POLYETHYLENE GLYCOL OR PEG

FILE 'SCISEARCH'  
 49789 POLYETHYLENE  
 36174 GLYCOL  
 11455 POLYETHYLENE GLYCOL  
 (POLYETHYLENE(W) GLYCOL)  
 14973 PEG  
 L2 21749 POLYETHYLENE GLYCOL OR PEG

FILE 'LIFESCI'  
 4480 "POLYETHYLENE"  
 5906 "GLYCOL"  
 3000 POLYETHYLENE GLYCOL  
 ("POLYETHYLENE" (W) "GLYCOL")  
 2228 PEG  
 L3 4068 POLYETHYLENE GLYCOL OR PEG

FILE 'BIOTECHDS'  
 3945 POLYETHYLENE  
 4515 GLYCOL  
 3036 POLYETHYLENE GLYCOL

```

        (POLYETHYLENE (W) GLYCOL)
        6044 PEG
L4      7723 POLYETHYLENE GLYCOL OR PEG

FILE 'BIOSIS'
        23941 POLYETHYLENE
        32583 GLYCOL
        14540 POLYETHYLENE GLYCOL
              (POLYETHYLENE (W) GLYCOL)
        11866 PEG
L5      20635 POLYETHYLENE GLYCOL OR PEG

FILE 'EMBASE'
        18670 "POLYETHYLENE"
        28246 "GLYCOL"
        8533 POLYETHYLENE GLYCOL
              ("POLYETHYLENE" (W) "GLYCOL")
        8915 PEG
L6      14197 POLYETHYLENE GLYCOL OR PEG

FILE 'HCAPLUS'
        323084 POLYETHYLENE
        328847 GLYCOL
        90651 POLYETHYLENE GLYCOL
              (POLYETHYLENE (W) GLYCOL)
        31718 PEG
L7      108474 POLYETHYLENE GLYCOL OR PEG

FILE 'NTIS'
        5591 POLYETHYLENE
        1894 GLYCOL
        253 POLYETHYLENE GLYCOL
              (POLYETHYLENE (W) GLYCOL)
        321 PEG
L8      499 POLYETHYLENE GLYCOL OR PEG

FILE 'ESBIOBASE'
        4796 POLYETHYLENE
        6391 GLYCOL
        3005 POLYETHYLENE GLYCOL
              (POLYETHYLENE (W) GLYCOL)
        3672 PEG
L9      5248 POLYETHYLENE GLYCOL OR PEG

FILE 'BIOTECHNO'
        4665 POLYETHYLENE
        7260 GLYCOL
        3167 POLYETHYLENE GLYCOL
              (POLYETHYLENE (W) GLYCOL)
        2816 PEG
L10     4868 POLYETHYLENE GLYCOL OR PEG

FILE 'WPIDS'
        197943 POLYETHYLENE
        109036 GLYCOL
        26705 POLYETHYLENE GLYCOL
              (POLYETHYLENE (W) GLYCOL)
        15802 PEG
L11     39735 POLYETHYLENE GLYCOL OR PEG

TOTAL FOR ALL FILES
L12     241954 POLYETHYLENE GLYCOL OR PEG

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=> s heterobifunct?

FILE 'MEDLINE'  
L13 533 HETEROBIFUNCT?

FILE 'SCISEARCH'  
L14 539 HETEROBIFUNCT?

FILE 'LIFESCI'  
L15 205 HETEROBIFUNCT?

FILE 'BIOTECHDS'  
L16 86 HETEROBIFUNCT?

FILE 'BIOSIS'  
L17 603 HETEROBIFUNCT?

FILE 'EMBASE'  
L18 432 HETEROBIFUNCT?

FILE 'HCAPLUS'  
L19 987 HETEROBIFUNCT?

FILE 'NTIS'  
L20 4 HETEROBIFUNCT?

FILE 'ESBIOBASE'  
L21 162 HETEROBIFUNCT?

FILE 'BIOTECHNO'  
L22 290 HETEROBIFUNCT?

FILE 'WPIDS'  
L23 174 HETEROBIFUNCT?

TOTAL FOR ALL FILES  
L24 4015 HETEROBIFUNCT?

=> s 112 and 124

FILE 'MEDLINE'  
L25 24 L1 AND L13

FILE 'SCISEARCH'  
L26 45 L2 AND L14

FILE 'LIFESCI'  
L27 3 L3 AND L15

FILE 'BIOTECHDS'  
L28 5 L4 AND L16

FILE 'BIOSIS'  
L29 23 L5 AND L17

FILE 'EMBASE'  
L30 18 L6 AND L18

FILE 'HCAPLUS'  
L31 73 L7 AND L19

FILE 'NTIS'  
L32 0 L8 AND L20

FILE 'ESBIOBASE'  
L33 14 L9 AND L21

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FILE 'BIOTECHNO'
L34          13 L10 AND L22

FILE 'WPIDS'
L35          24 L11 AND L23

TOTAL FOR ALL FILES
L36          242 L12 AND L24

=> s l36 not 1999-2005/py
FILE 'MEDLINE'
      3329100 1999-2005/PY
L37          10 L25 NOT 1999-2005/PY

FILE 'SCISEARCH'
      6385167 1999-2005/PY
L38          18 L26 NOT 1999-2005/PY

FILE 'LIFESCI'
      647543 1999-2005/PY
L39          0 L27 NOT 1999-2005/PY

FILE 'BIOTECHDS'
      126993 1999-2005/PY
L40          2 L28 NOT 1999-2005/PY

FILE 'BIOSIS'
      3285337 1999-2005/PY
L41          10 L29 NOT 1999-2005/PY

FILE 'EMBASE'
      2914482 1999-2005/PY
L42          3 L30 NOT 1999-2005/PY

FILE 'HCAPLUS'
      6181508 1999-2005/PY
L43          28 L31 NOT 1999-2005/PY

FILE 'NTIS'
      108997 1999-2005/PY
L44          0 L32 NOT 1999-2005/PY

FILE 'ESBIOBASE'
      1817014 1999-2005/PY
L45          6 L33 NOT 1999-2005/PY

FILE 'BIOTECHNO'
      611346 1999-2005/PY
L46          4 L34 NOT 1999-2005/PY

FILE 'WPIDS'
      5325720 1999-2005/PY
L47          0 L35 NOT 1999-2005/PY

TOTAL FOR ALL FILES
L48          81 L36 NOT 1999-2005/PY

=> dup rem l48
PROCESSING COMPLETED FOR L48
L49          32 DUP REM L48 (49 DUPLICATES REMOVED)

=> d tot

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TI Convenient polymer-supported synthetic route to **heterobifunctional** polyethylene glycols.  
 SO Bioconjugate chemistry, (1998 Nov-Dec) 9 (6) 842-6.  
 Journal code: 9010319. ISSN: 1043-1802.  
 AU Bettinger T; Remy J S; Erbacher P; Behr J P  
 AN 1999034528 MEDLINE

L49 ANSWER 2 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 DUPLICATE 2  
 TI Polymeric micelles as drug delivery systems: a reactive polymeric micelle carrying aldehyde groups  
 SO POLYMERS FOR ADVANCED TECHNOLOGIES, (OCT-NOV 1998) Vol. 9, No. 10-11, pp. 768-776.  
 Publisher: JOHN WILEY & SONS LTD, BAFFINS LANE CHICHESTER, W SUSSEX PO19 1UD, ENGLAND.  
 ISSN: 1042-7147.  
 AU Scholz C (Reprint); Iijima M; Nagasaki Y; Kataoka K  
 AN 1998:846946 SCISEARCH

L49 ANSWER 3 OF 32 MEDLINE on STN DUPLICATE 3  
 TI Camptothecin-20-**PEG** ester transport forms: the effect of spacer groups on antitumor activity.  
 SO Bioorganic & medicinal chemistry, (1998 May) 6 (5) 551-62.  
 Journal code: 9413298. ISSN: 0968-0896.  
 AU Greenwald R B; Pendri A; Conover C D; Lee C; Choe Y H; Gilbert C; Martinez A; Xia J; Wu D; Hsue M  
 AN 1998293113 MEDLINE

L49 ANSWER 4 OF 32 MEDLINE on STN DUPLICATE 4  
 TI Synthesis of **heterobifunctional** poly(ethylene glycol) with a reducing monosaccharide residue at one end.  
 SO Bioconjugate chemistry, (1998 Mar-Apr) 9 (2) 300-3.  
 Journal code: 9010319. ISSN: 1043-1802.  
 AU Nakamura T; Nagasaki Y; Kataoka K  
 AN 1998208328 MEDLINE

L49 ANSWER 5 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 DUPLICATE 5  
 TI Carboxymethyl cellulose as a new **heterobifunctional** ligand carrier for affinity precipitation of proteins  
 SO BIOSEPARATION, (30 JUL 1998) Vol. 7, No. 4, pp. 195-205.  
 Publisher: KLUWER ACADEMIC PUBL, SPUIBOULEVARD 50, PO BOX 17, 3300 AA DORDRECHT, NETHERLANDS.  
 ISSN: 0923-179X.  
 AU Lali A (Reprint); Balan S; John R; DSouza F  
 AN 1999:495549 SCISEARCH

L49 ANSWER 6 OF 32 MEDLINE on STN DUPLICATE 6  
 TI Basic studies on **heterobifunctional** biotin-**PEG** conjugates with a 3-(4-pyridyldithio)propionyl marker on the second terminus.  
 SO Bioconjugate chemistry, (1997 Jul-Aug) 8 (4) 545-51.  
 Journal code: 9010319. ISSN: 1043-1802.  
 AU Kaiser K; Marek M; Haselgrubler T; Schindler H; Gruber H J  
 AN 97403085 MEDLINE

L49 ANSWER 7 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Preparation and characterization of oligosaccharide- and oligopeptide-bearing stealth liposomes  
 SO Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17 (1997), POLY-229 Publisher: American Chemical Society, Washington, D. C.  
 CODEN: 64AOAA  
 AU Gittelman, Joshua; Harding, Jennifer; Mullah, Nasreen; Guo, Lake; DeFrees, Shawn; Zalipsky, Samuel

AN 1997:164154 HCAPLUS

L49 ANSWER 8 OF 32 MEDLINE on STN DUPLICATE 7  
 TI Poly(ethylene glycol)-grafted liposomes with oligopeptide or  
 oligosaccharide ligands appended to the termini of the polymer chains.  
 SO Bioconjugate chemistry, (1997 Mar-Apr) 8 (2) 111-8.  
 Journal code: 9010319. ISSN: 1043-1802.  
 AU Zalipsky S; Mullah N; Harding J A; Gittelman J; Guo L; DeFrees S A  
 AN 97249464 MEDLINE

L49 ANSWER 9 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
 STN DUPLICATE 8  
 TI Poly(ethylene glycol)-based micelles for drug delivery  
 SO ACS SYMPOSIUM SERIES, (FEB 1997) Vol. 680, pp. 99-116.  
 Publisher: AMER CHEMICAL SOC, 1155 SIXTEENTH ST NW, WASHINGTON, DC 20036.  
 ISSN: 0097-6156.  
 AU La S B (Reprint); Nagasaki Y; Kataoka K  
 AN 1998:12665 SCISEARCH

L49 ANSWER 10 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Recent developments in ligand-bearing polymer-grafted liposomes  
 SO Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17  
 (1997), POLY-056 Publisher: American Chemical Society, Washington, D. C.  
 CODEN: 64AOAA  
 AU Zalipsky, Samuel  
 AN 1997:163983 HCAPLUS

L49 ANSWER 11 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Synthesis and characterization of bioaffinity interactive  
**heterobifunctional** polyethylene glycols (protein immobilization)  
 SO (1996) 307 pp. Avail.: UMI, Order No. DA9720585  
 From: Diss. Abstr. Int., B 1997, 58(2), 836  
 AU Ehteshami, Gholam Reza  
 AN 1997:512917 HCAPLUS  
 DN 127:217369

L49 ANSWER 12 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI novel reactive polymeric micelles for an intelligent drug carrier  
 SO Proceedings of the International Symposium on Controlled Release of  
 Bioactive Materials (1996), 23rd, 779-780  
 CODEN: PCRMEY; ISSN: 1022-0178  
 AU Nagasaki, Yukio; Scholz, Carmen; Iijima, Michihiro; Kato, Masao; Kataoka,  
 Kazunori  
 AN 1996:522484 HCAPLUS  
 DN 125:230429

L49 ANSWER 13 OF 32 MEDLINE on STN DUPLICATE 9  
 TI Interactions and applications of soluble **heterobifunctional**  
 affinity chelating polymers in immobilized metal affinity chromatography.  
 SO Journal of molecular recognition : JMR, (1996 Sep-Dec) 9 (5-6) 733-7.  
 Journal code: 9004580. ISSN: 0952-3499.  
 AU Ehteshami G; Porath J; Guzman R  
 AN 97317982 MEDLINE

L49 ANSWER 14 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI **Heterobifunctional** poly(ethylene glycol) with a reducing  
 monosaccharide residue at one end for drug targeting  
 SO Proceedings of the International Symposium on Controlled Release of  
 Bioactive Materials (1996), 23rd, 625-626  
 CODEN: PCRMEY; ISSN: 1022-0178  
 AU Nakamura, T.; Nagasaki, Y.; Kato, M.; Kataoka, K.  
 AN 1996:522309 HCAPLUS  
 DN 125:230596

- L49 ANSWER 15 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Synthesis of **heterobifunctional** poly(ethylene glycol) with a  
 reducing monosaccharide residue at one end for drug delivery  
 SO Advanced Biomaterials in Biomedical Engineering and Drug Delivery Systems,  
 [Iketani Conference on Biomedical Polymers], 5th, Kagoshima, Japan, Apr.  
 18-22, 1995 (1996), Meeting Date 1995, 323-324. Editor(s): Ogata, Naoya.  
 Publisher: Springer, Tokyo, Japan.  
 CODEN: 63CXA6  
 AU Nakamura, Teruo; Nagasaki, Yukio; Kato, Masao; Kataoka, Kazunori  
 AN 1996:489030 HCAPLUS  
 DN 125:204201
- L49 ANSWER 16 OF 32 MEDLINE on STN DUPLICATE 10  
 TI Preparation and characterization of conjugates of (modified) human serum  
 albumin and liposomes: drug carriers with an intrinsic anti-HIV activity.  
 SO Biochimica et biophysica acta, (1996 Jan 31) 1278 (2) 183-90.  
 Journal code: 0217513. ISSN: 0006-3002.  
 AU Kamps J A; Swart P J; Morselt H W; Pauwels R; De Bethune M P; De Clercq E;  
 Meijer D K; Scherphof G L  
 AN 96174859 MEDLINE
- L49 ANSWER 17 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Synthesis and applications of end-group functionalized  
**polyethylene glycol**-phospholipid conjugates  
 SO Polymer Preprints (American Chemical Society, Division of Polymer  
 Chemistry) (1996), 37(2), 127-128  
 CODEN: ACPPAY; ISSN: 0032-3934  
 AU Zalipsky, Samuel; Brandeis, Ester; Mullah, Nasreen; Harding, Jennifer  
 AN 1996:562069 HCAPLUS  
 DN 125:230498
- L49 ANSWER 18 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Functionalized polymers and their biologically-relevant conjugates  
 SO Frontiers in Biomedicine and Biotechnology (1996), 3(Biomedical Functions  
 and Biotechnology of Natural and Artificial Polymers), 63-76  
 CODEN: FBBIET; ISSN: 1067-1897  
 AU Zalipsky, Samuel  
 AN 1996:512596 HCAPLUS  
 DN 125:177083
- L49 ANSWER 19 OF 32 MEDLINE on STN DUPLICATE 11  
 TI Prolonged circulation of recombinant human granulocyte-colony stimulating  
 factor by covalent linkage to albumin through a **heterobifunctional**  
**polyethylene glycol**.  
 SO Pharmaceutical research, (1995 Dec) 12 (12) 1883-8.  
 Journal code: 8406521. ISSN: 0724-8741.  
 AU Paige A G; Whitcomb K L; Liu J; Kinstler O  
 AN 96263330 MEDLINE
- L49 ANSWER 20 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
 STN DUPLICATE 12  
 TI PRIMARY AMINO-TERMINAL **HETEROBIFUNCTIONAL** POLY(ETHYLENE OXIDE) -  
 FACILE SYNTHESIS OF POLY(ETHYLENE OXIDE) WITH A PRIMARY AMINO GROUP AT ONE  
 END AND A HYDROXYL GROUP AT THE OTHER END  
 SO BIOCONJUGATE CHEMISTRY, (NOV/DEC 1995) Vol. 6, No. 6, pp. 702-704.  
 ISSN: 1043-1802.  
 AU NAGASAKI Y; IJIMA M; KATO M; KATAOKA K (Reprint)  
 AN 95:839794 SCISEARCH
- L49 ANSWER 21 OF 32 MEDLINE on STN DUPLICATE 13  
 TI Synthesis and applications of a new poly(ethylene glycol) derivative for  
 the crosslinking of amines with thiols.  
 SO Bioconjugate chemistry, (1995 May-Jun) 6 (3) 242-8.  
 Journal code: 9010319. ISSN: 1043-1802.

AU Haselgrubler T; Amerstorfer A; Schindler H; Gruber H J  
AN 95359270 MEDLINE

L49 ANSWER 22 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
TI FORMYL-ENDED **HETEROBIFUNCTIONAL** POLY(ETHYLENE OXIDE) - SYNTHESIS  
OF POLY(ETHYLENE OXIDE) WITH A FORMYL GROUP AT ONE END AND A HYDROXYL  
GROUP AT THE OTHER END  
SO BIOCONJUGATE CHEMISTRY, (MAR/APR 1995) Vol. 6, No. 2, pp. 231-233.  
ISSN: 1043-1802.  
AU NAGASAKI Y (Reprint); KUTSUNA T; IIJIMA M; KATO M; KATAOKA K; KITANO S;  
KADOMA Y  
AN 95:246098 SCISEARCH

L49 ANSWER 23 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
DUPLICATE 14  
TI **HETEROBIFUNCTIONAL** POLY(ETHYLENE OXIDE) - SYNTHESIS OF  
ALPHA-METHOXY-OMEGA-AMINO AND ALPHA-HYDROXY-OMEGA-AMINO PEOS WITH THE SAME  
MOLECULAR-WEIGHTS  
SO BIOCONJUGATE CHEMISTRY, (MAR/APR 1995) Vol. 6, No. 2, pp. 226-230.  
ISSN: 1043-1802.  
AU CAMMAS S; NAGASAKI Y; KATAOKA K (Reprint)  
AN 95:246097 SCISEARCH

L49 ANSWER 24 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
DUPLICATE 15  
TI PREPARATION AND APPLICATIONS OF **POLYETHYLENE GLYCOL**  
-POLYSTYRENE GRAFT RESIN SUPPORTS FOR SOLID-PHASE PEPTIDE-SYNTHESIS  
SO REACTIVE POLYMERS, (JUN 1994) Vol. 22, No. 3, pp. 243-258.  
ISSN: 0923-1137.  
AU ZALIPSKY S; CHANG J L; ALBERICIO F; BARANY G (Reprint)  
AN 94:417855 SCISEARCH

L49 ANSWER 25 OF 32 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
DUPLICATE 16  
TI Novel **heterobifunctionalized** polystyrene-**polyethylene**  
**glycol** resin for simultaneous preparation of free and immobilized  
peptides and biological activity detected by confocal microscopy.  
SO Letters in Peptide Science, (1994) Vol. 1, No. 3, pp. 117-126.  
ISSN: 0929-5666.  
AU Fleckenstein, Burkhard; Wiesmueller, Karl-Heinz; Brich, Manfred; Jung,  
Guenther [Reprint author]  
AN 1996:479470 BIOSIS

L49 ANSWER 26 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
TI **HETEROBIFUNCTIONAL** POLY(ETHYLENE OXIDE) - ONE-POT SYNTHESIS OF  
POLY(ETHYLENE OXIDE) WITH A PRIMARY AMINO GROUP AT ONE END AND A HYDROXYL  
GROUP AT THE OTHER END  
SO POLYMER BULLETIN, (JUN 1994) Vol. 33, No. 1, pp. 1-6.  
ISSN: 0170-0839.  
AU KIM Y J; NAGASAKI Y (Reprint); KATAOKA K; KATO M; YOKOYAMA M; OKANO T;  
SAKURAI Y  
AN 94:654360 SCISEARCH

L49 ANSWER 27 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
TI Model ligands linked to polymer chains on liposomal surfaces: application  
of a new functionalized **polyethylene glycol**-lipid  
conjugate  
SO Polymeric Materials Science and Engineering (1993), 69, 519-20  
CODEN: PMSEGD; ISSN: 0743-0515  
AU Zalipsky, Samuel; Newman, Mary S.; Punatambekar, Bhagya; Woodle, Martin C.  
AN 1996:255228 HCAPLUS  
DN 124:325252



L49 ANSWER 28 OF 32 MEDLINE on STN DUPLICATE 17  
 TI Synthesis of an end-group functionalized **polyethylene glycol**-lipid conjugate for preparation of polymer-grafted liposomes.  
 SO Bioconjugate chemistry, (1993 Jul-Aug) 4 (4) 296-9.  
 Journal code: 9010319. ISSN: 1043-1802.  
 AU Zalipsky S  
 AN 94032642 MEDLINE

L49 ANSWER 29 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Monoclonal antibody production by antigen-antibody mediated cell fusion  
 SO Mianyxue Zazhi (1993), 9(1), 58-60  
 CODEN: MIZAED; ISSN: 1000-8861  
 AU Liu, Jilin; Qi, Kunyuan; Chen, Yuying  
 AN 1993:578833 HCAPLUS  
 DN 119:178833

L49 ANSWER 30 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI The synthesis of **heterobifunctional** linkers for the conjugation of ligands to molecular probes  
 SO Journal of Organic Chemistry (1991), 56(13), 4326-9  
 CODEN: JOCEAH; ISSN: 0022-3263  
 AU Bertozzi, Carolyn R.; Bednarski, Mark D.  
 AN 1991:429746 HCAPLUS  
 DN 115:29746

L49 ANSWER 31 OF 32 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Production of monoclonal antibodies to calcitonin and development of a two-site enzyme immunoassay;  
 monoclonal antibody preparation by hybridoma construction; potential medullary thyroid carcinoma diagnosis  
 SO Mol.Immunol.; (1987) 24, 11, 1169-76  
 CODEN: MOIMDS  
 AU Racchetti G; Fossati G; Comitti R; Putignano S; \*Galante Y M  
 AN 1988-01017 BIOTECHDS

L49 ANSWER 32 OF 32 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Neutralizing monoclonal antibodies to hepatitis A virus: partial localization of a neutralizing antigenic site;  
 hybridoma generation and monoclonal antibody production  
 SO J.Virol.; (1984) 52, 2, 465-73  
 CODEN: JOVIAM  
 AU Hughes J V; Stanton L W; Tomassini J E; Long W J; Scolnick E M  
 AN 1985-00733 BIOTECHDS

=> d ab 1,4,6,11,13-15,17-23,26,30

L49 ANSWER 1 OF 32 MEDLINE on STN DUPLICATE 1  
 AB Conventional synthesis of **heterobifunctional** poly(ethylene glycol) derivatives, especially of medium size, is a rather tedious task. A straightforward solid-phase methodology has been developed that is illustrated here by the synthesis of alpha-pyridyldithio-omega-hydroxy-poly(ethylene glycol)600. This derivative was prepared from resin-bound PEG600 with a global yield of 65% for 6 individual steps, i.e., with an average yield of 93%/step. Intermediate purification steps simply consisted of resin washing. Progress of each reaction toward completion could conveniently be monitored by <sup>13</sup>C NMR of the resin-bound **PEG** derivatives. This example highlights both the versatility and efficiency of combining polymer-supported synthesis with direct <sup>13</sup>C-NMR characterization of the intermediate compounds.

L49 ANSWER 4 OF 32 MEDLINE on STN DUPLICATE 4

AB A new synthetic method for a **heterobifunctional** poly(ethylene glycol) (**PEG**) having a monosaccharide moiety at one end was created. **PEG** with a reducing monosaccharide residue at the alpha-end, which is linked to a defined position of the sugar molecule, could be prepared via the anionic polymerization of ethylene oxide (EO) initiated with a potassium alkolate of a protected monosaccharide such as 1,2;5,6-di-O-isopropylidene-D-glucofuranose (DIGL), 1,2;3,4-di-O-isopropylidene-D-galactopyranose (DIGA), and 1,2-O-isopropylidene-3,5-O-benzylidene-D-glucofuranose (IBGL). The resulting **PEGs** possess the corresponding sugar molecule at the alpha-chain end and a hydroxyl group at the omega-chain end. The omega-chain end could be converted to several functional groups such as allyl, amino, and hydroxycarbonyl groups in high yield. Such **heterobifunctional** **PEGs** possessing a reducing monosaccharide residue at the alpha-end are one of the promising tools for bioconjugate chemistries.

L49 ANSWER 6 OF 32 MEDLINE on STN DUPLICATE 6

AB **Heterobifunctional** poly(ethylene glycol) (**PEG**) derivatives with a biotin terminus have been synthesized and characterized with respect to avidin binding. Unambiguous measurement of biotinyl and pyridyldithiopropionyl end groups was established by selecting suitable assays and introducing necessary modifications. Functional studies on the binding of biotin-**PEG** conjugates to avidin tetramers revealed much similarity to known biotin-spacer-peptide conjugates with 7-27 atom spacers: dissociation kinetics of the initially formed 4:1 complexes were multiexponential, the complex with 2 ligands per avidin dissociating rather slowly with half-times of approximately 2 days at 25 degrees C. The observed stability of 3:1 and 2:1 complexes with avidin is particularly significant since it allows exploitation of the additional advantages of **PEG** spacers, i.e. reduced steric strain in biotin-avidin-biotin bridges, reduced nonspecific adsorption of biotinylated probes and markers, and, especially, uncomparable fluorescence intensities of biotin-**PEG**-fluorophore conjugates as is demonstrated in the accompanying study (second of three papers in this issue).

L49 ANSWER 11 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB Unavailable

L49 ANSWER 13 OF 32 MEDLINE on STN DUPLICATE 9

AB The interaction of immobilized metal-chelating adsorbents with a dual **heterobifunctional** soluble **polyethylene glycol** (**PEG**) of the form X-**PEG**-Y is described, where X represents an affinity ligand and Y a chelating agent. The bifunctional **PEG** derivative used in this study was biotin-**PEG**-iminodiacetic acid (IDA). Affinity and metal binding constants of this conjugate for copper and avidin were found to be in excellent agreement with the binding affinities of the corresponding unconjugated groups IDA and biotin, respectively. The characteristics of the interaction of this bifunctional derivative is described in terms of its adsorption in immobilized metal affinity chromatographic (IMAC) adsorbents. The results show that this derivative can be reversibly and selectively bound to specific IMAC adsorbents under certain experimental conditions. This immobilized scheme resembles a system where an IMAC adsorbent was transformed into an affinity adsorbent as a result of the interactions of both chelating derivatives, one in solution (biotin-**PEG**-IDA) and the other on the solid matrix (IMAC adsorbent). Apparently the modified IMAC adsorbents, once the affinity chelating ligands are attached, exhibit characteristics similar to those of covalently bound affinity ligands in affinity chromatographic systems.

L49 ANSWER 14 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB Polymeric micelles with reducing sugar residues on their surface region were prepared **Heterobifunctional** poly(ethylene glycol) with

reducing sugar residue at one end was prepared for drug targeting.

L49 ANSWER 15 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB Installation of pilot mols. on surface of the micelle-forming polymeric drug is considered to further enhance cellular uptake of the micelle at target tissue. In order to achieve this strategy, new **heterobifunctional** poly(ethylene glycol) with a reducing monosaccharide residue at one end were synthesized. Potassium alkoxides of carbohydrate derivs. reacted with ethylene oxide (EO) to yield a variety of sugar derivative bearing poly(ethylene glycol). Subsequently, protective groups on carbohydrate residue were removed to yield target compds. Reducing monosaccharide residue was incorporated to one end of poly(ethylene glycol) chain regiospecifically and quant. without a spacer moiety.

L49 ANSWER 17 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB Efficient synthetic protocols for the preparation of various end group-functionalized **PEG**-distearoylphosphatidylethanolamine derivs. were established using **heterobifunctional PEG** derivs. These materials are used for preparation of **PEG**-grafted liposomes, which contain biol. relevant ligands covalently fixed at the periphery of the polymeric brush covering the vesicles. A balance between preservation of binding activity of the ligand and reasonable long circulating plasma lifetime could be found in almost every case. This suggests that this technol. has an array of multiple applications in targeted liposomal drug delivery as well as in platform presentation of useful ligands, which in their free form are cleared from systemic circulation too fast to be useful.

L49 ANSWER 18 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB A review, with 35 refs. Due to their excellent biocompatibility properties functionalized polyethylene glycols (PEGs) were developed as modifiers of biol. mols. Succinimidyl carbonate (SC) derivs. have proven themselves as reagents of choice for preparation of protein, peptide and lipid conjugates, as well as for preparation of alternating copolymers containing **PEG** and lysine, which possess excellent characteristics as carriers of low mol. weight drugs. Hydrazide (Hz) **PEG** is useful as a reagent for site-specific modification of periodate-treated glycoproteins on their carbohydrate residues. **Heterobifunctional** derivative of **PEG** containing both Hz and SC groups was synthesized and used for preparation of end-group functionalized **PEG**-lipid, forming long-circulating liposomes. The Hz-**PEG**-liposomes are useful for attachment of various ligands to the extremities of the grafted polymer chains. Amphipathic poly(2-oxazolines) with carboxyl groups at either initiation or termination ends of chain were synthesized and linked to lipids. Liposomes derived from these conjugates exhibited low hepatosplenic uptake and longevity in bloodstream to the same extent as **PEG**-grafted vesicles.

L49 ANSWER 19 OF 32 MEDLINE on STN

DUPLICATE 11

AB PURPOSE: Recombinant human granulocyte-colony stimulating factor (rhG-CSF) was covalently conjugated to both rat and human serum albumin (RSA and HSA respectively) to increase the circulating half life ( $t_{1/2}$ ) of rhG-CSF. METHODS: Conjugates of RSA (MW 67,000) and HSA (MW 66,000) were prepared by linking the two proteins through a **heterobifunctional** maleimido-carboxyl **polyethylene glycol (PEG)** and were tested in the rat. The conjugates were injected intravenously (IV) at the equivalent dose of 50 micrograms/kg of rhG-CSF, and white blood cell (WBC) counts and plasma concentrations of drug were determined. A comparison of pharmacokinetic parameters was made between rhG-CSF, the conjugates RSA-**PEG**-rhG-CSF and HSA-**PEG**-rhG-CSF, and a non-covalent mixture of rhG-CSF and HSA. RESULTS: The albumin-rhG-CSF conjugates are eliminated more slowly from the circulation. The clearance values are reduced from 0.839 +/- 0.121 ml/min/kg for rhG-CSF to 0.172 +/-

0.013 ml/min/kg for RSA-**PEG**-rhG-CSF and 0.141 +/- 0.005 ml/min/kg for HSA-**PEG**-rhG-CSF. WBC counts increased in both absolute number and duration as compared to rhG-CSF alone. The albumin rhG-CSF conjugates had enhanced serum stability relative to free rhG-CSF. The rate of degradation of the albumin conjugates incubated in rat serum at 37 degrees C decreased five fold. CONCLUSIONS: The results from the study show that specific conjugation of rhG-CSF to albumin decreases plasma clearance in vivo, causes increased WBC response, and increases serum stability as compared to free rhG-CSF.

L49 ANSWER 20 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN DUPLICATE 12

AB Well-defined poly(ethylene oxide) (PEO) with a cyano group at one end and a hydroxyl group at the other terminus was synthesized by the anionic ring opening polymerization of ethylene oxide (EO) initiated with (cyanomethyl)potassium (CMP) which was prepared by the metalation reaction of acetonitrile with potassium naphthalene in THF. Primary amino-terminal heterotelechelic PEO was obtained by the reduction of the cyano group at the end of the polymer chain by lithium aluminum hydride.

L49 ANSWER 21 OF 32 MEDLINE on STN DUPLICATE 13

AB A **heterobifunctional** crosslinker was synthesized from a diamine derivative of poly(ethylene glycol) (**PEG**, average molecular weight 800 Da), with the functional groups 2-(pyridyldithio)propionyl (PDP) and N-hydroxysuccinimide ester (NHS). The crosslinker can be used for linkage of two different proteins for which a suitable protocol is presented, explified by crosslinking of two antibodies with 50% yield. In a second application the crosslinker is used to generate immunoliposomes. The NHS group was reacted with an aminolipid for liposome anchorage, and antibodies were bound to the PDP group via disulfide bonds. Loading of liposomes with antibodies was easily adjustable, even down to only a few per liposome. This crosslinker with its particular length appears especially suited for the flexible anchorage of biomembranes, opening new perspectives in membrane research as discussed.

L49 ANSWER 22 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN

AB Well-defined poly(ethylene oxide) (**PEG**) with a formyl group at one end and a hydroxyl group at the other terminus was synthesized by the anionic ring opening polymerization of ethylene oxide (EO) with a new organometallic initiator possessing an acetal moiety, potassium 3,3-diethoxypropyl alkoxide. Hydrolysis of the acetal moiety produced a formyl group-terminated **heterobifunctional** PEO with a hydroxyl group at the other end.

L49 ANSWER 23 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN DUPLICATE 14

AB Well-defined alpha-methoxy-omega-amino and alpha-hydroxy-omega-amino poly(ethylene oxide)s (PEOs) were obtained after chemical modifications of alpha-hydroxy-omega-allyl **PEG** which was synthesized by anionic polymerization of ethylene oxide (EO) with allyl alcoholate as initiator; molecular weights of the prepolymer were controlled by the monomer/initiator ratio. Addition of methyl iodide on the hydroxy function of this prepolymer led to an alpha-methoxy-omega-allyl **PEG**; completion of the reaction and purity of the resulting polymer were demonstrated by H-1, C-13 NMR and GPC studies. Addition reactions of 2-amino-ethanethiol hydrochloride on alpha-hydroxy-omega-allyl PEO and alpha-methoxy-omega-allyl PEO in the presence of azobisisobutyronitrile (AIBN) led to the expected homopolymers without any side reactions as shown by H-1 and C-13 NMR spectra.

L49 ANSWER 26 OF 32 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN

AB Well-defined poly(ethylene oxide)s with a primary amino group at one

end and a hydroxyl group at the other terminus were synthesized with a new sila-protected amino functionality initiator, potassium N-[2-(2,2,5,5-tetramethyl-1-aza-2,5-disilacyclopentyl)-ethyl]m?? ethyl amide [1b]. 1b initiated an anionic polymerization of ethylene oxide (OE) to form a polymer (PEO) without any side reactions such as a cleavage reaction of protective group and a chain transfer reaction. The molecular weights of the PEO determined from GPC and MALDI TOF-MS spectrometry agreed well with those from end group analysis using H-1 and C-13 NMR and TLC and also with the expected value from EO/initiator ratio. From these results, it was concluded that the polymers thus obtained had a primary amino group at one end and a hydroxy group at the other end and can be regarded as hetrobifunctional PEO.

L49 ANSWER 30 OF 32 HCAPLUS COPYRIGHT 2005 ACS on STN

AB The **heterobifunctional polyethylene glycol** linker H<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>O)<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>N<sub>3</sub> (I) was synthesized. This linker contains a free amine that can be conjugated directly to biol. mols. or probes and an azide that can be reduced to an amine for conjugation to other mols. As an example of the use of I, a carbohydrate-fluorescein conjugate II was synthesized for use in cell-surface receptor studies.

=> log y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	118.74	118.95
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
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CA SUBSCRIBER PRICE	-3.65	-3.65

STN INTERNATIONAL LOGOFF AT 11:53:06 ON 21 APR 2005

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 13:44:36 ON 21 APR 2005

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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FULL ESTIMATED COST	0.21	0.21

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ALL COPYRIGHTS AND RESTRICTIONS APPLY. SEE HELP USAGETERMS FOR DETAILS.

11 FILES IN THE FILE LIST

=> s cellulose binding domain# or cbd#

FILE 'MEDLINE'

- 43038 CELLULOSE
- 713408 BINDING
- 196929 DOMAIN#
- 385 CELLULOSE BINDING DOMAIN#
- (CELLULOSE(W) BINDING(W) DOMAIN#)
- 2239 CBD#

L1 2463 CELLULOSE BINDING DOMAIN# OR CBD#

FILE 'SCISEARCH'

- 38704 CELLULOSE
- 660278 BINDING
- 356047 DOMAIN#
- 608 CELLULOSE BINDING DOMAIN#
- (CELLULOSE(W) BINDING(W) DOMAIN#)

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      224554 "BINDING"
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      35688 BINDING
      15157 DOMAIN#
      281 CELLULOSE BINDING DOMAIN#
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L4      333 CELLULOSE BINDING DOMAIN# OR CBD#

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      46721 CELLULOSE
      624533 BINDING
      199239 DOMAIN#
      516 CELLULOSE BINDING DOMAIN#
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      1772 CBD#
L5      2083 CELLULOSE BINDING DOMAIN# OR CBD#

FILE 'EMBASE'
      26813 "CELLULOSE"
      620399 "BINDING"
      181687 DOMAIN#
      382 CELLULOSE BINDING DOMAIN#
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      2100 CBD#
L6      2308 CELLULOSE BINDING DOMAIN# OR CBD#

FILE 'HCAPLUS'
      325320 CELLULOSE
      864414 BINDING
      307415 DOMAIN#
      723 CELLULOSE BINDING DOMAIN#
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      1710 CBD#
L7      2121 CELLULOSE BINDING DOMAIN# OR CBD#

FILE 'NTIS'
      3690 CELLULOSE
      9761 BINDING
      22222 DOMAIN#
      4 CELLULOSE BINDING DOMAIN#
          (CELLULOSE (W) BINDING (W) DOMAIN#)
      332 CBD#
L8      335 CELLULOSE BINDING DOMAIN# OR CBD#

FILE 'ESBIOBASE'
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      237852 BINDING
      120464 DOMAIN#
      336 CELLULOSE BINDING DOMAIN#
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      806 CBD#

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L9 975 CELLULOSE BINDING DOMAIN# OR CBD#

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277750 BINDING  
111168 DOMAIN#  
361 CELLULOSE BINDING DOMAIN#  
(CELLULOSE (W) BINDING (W) DOMAIN#)  
373 CBD#

L10 574 CELLULOSE BINDING DOMAIN# OR CBD#

FILE 'WPIDS'

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103969 BINDING  
46697 DOMAIN#  
110 CELLULOSE BINDING DOMAIN#  
(CELLULOSE (W) BINDING (W) DOMAIN#)  
164 CBD#

L11 230 CELLULOSE BINDING DOMAIN# OR CBD#

TOTAL FOR ALL FILES

L12 14660 CELLULOSE BINDING DOMAIN# OR CBD#

=> s crystalline cellulose

FILE 'MEDLINE'

34095 CRYSTALLINE  
43038 CELLULOSE

L13 269 CRYSTALLINE CELLULOSE  
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FILE 'SCISEARCH'

103619 CRYSTALLINE  
38704 CELLULOSE

L14 690 CRYSTALLINE CELLULOSE  
(CRYSTALLINE (W) CELLULOSE)

FILE 'LIFESCI'

3623 "CRYSTALLINE"  
10010 "CELLULOSE"

L15 292 CRYSTALLINE CELLULOSE  
("CRYSTALLINE" (W) "CELLULOSE")

FILE 'BIOTECHDS'

1535 CRYSTALLINE  
11118 CELLULOSE

L16 326 CRYSTALLINE CELLULOSE  
(CRYSTALLINE (W) CELLULOSE)

FILE 'BIOSIS'

20553 CRYSTALLINE  
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L17 620 CRYSTALLINE CELLULOSE  
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26813 "CELLULOSE"

L18 296 CRYSTALLINE CELLULOSE  
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FILE 'HCAPLUS'

66808 CRYSTALLINE  
326906 CRYST  
346215 CRYSTALLINE

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L19      2821 CRYSTALLINE CELLULOSE
                (CRYSTALLINE (W) CELLULOSE)

FILE 'NTIS'
    8491 CRYSTALLINE
    3690 CELLULOSE
L20      34 CRYSTALLINE CELLULOSE
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FILE 'ESBIOBASE'
    5180 CRYSTALLINE
    7078 CELLULOSE
L21      218 CRYSTALLINE CELLULOSE
                (CRYSTALLINE (W) CELLULOSE)

FILE 'BIOTECHNO'
    2758 CRYSTALLINE
    9154 CELLULOSE
L22      244 CRYSTALLINE CELLULOSE
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FILE 'WPIDS'
    69542 CRYSTALLINE
    1624 CRYST
    70952 CRYSTALLINE
                (CRYSTALLINE OR CRYST)
    97591 CELLULOSE
L23      1054 CRYSTALLINE CELLULOSE
                (CRYSTALLINE (W) CELLULOSE)

TOTAL FOR ALL FILES
L24      6864 CRYSTALLINE CELLULOSE

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FILE 'MEDLINE'
    713408 BINDING
    190697 AFFINITY
L25      59 (BINDING OR AFFINITY) AND L1 AND L13

FILE 'SCISEARCH'
    660278 BINDING
    160713 AFFINITY
L26      112 (BINDING OR AFFINITY) AND L2 AND L14

FILE 'LIFESCI'
    224554 BINDING
    67253 AFFINITY
L27      44 (BINDING OR AFFINITY) AND L3 AND L15

FILE 'BIOTECHDS'
    35688 BINDING
    14608 AFFINITY
L28      28 (BINDING OR AFFINITY) AND L4 AND L16

FILE 'BIOSIS'
    624533 BINDING
    203250 AFFINITY
L29      65 (BINDING OR AFFINITY) AND L5 AND L17

FILE 'EMBASE'
    620399 BINDING
    194894 AFFINITY

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L30 59 (BINDING OR AFFINITY) AND L6 AND L18

FILE 'HCAPLUS'

864414 BINDING

273178 AFFINITY

L31 86 (BINDING OR AFFINITY) AND L7 AND L19

FILE 'NTIS'

9761 BINDING

2473 AFFINITY

L32 1 (BINDING OR AFFINITY) AND L8 AND L20

FILE 'ESBIOBASE'

237852 BINDING

71019 AFFINITY

L33 47 (BINDING OR AFFINITY) AND L9 AND L21

FILE 'BIOTECHNO'

277750 BINDING

87816 AFFINITY

L34 50 (BINDING OR AFFINITY) AND L10 AND L22

FILE 'WPIDS'

103969 BINDING

28766 AFFINITY

L35 2 (BINDING OR AFFINITY) AND L11 AND L23

TOTAL FOR ALL FILES

L36 553 (BINDING OR AFFINITY) AND L12 AND L24

=> s l36 not 2000-2004/py

FILE 'MEDLINE'

2699806 2000-2004/PY

L37 46 L25 NOT 2000-2004/PY

FILE 'SCISEARCH'

5181900 2000-2004/PY

L38 71 L26 NOT 2000-2004/PY

FILE 'LIFESCI'

534181 2000-2004/PY

L39 36 L27 NOT 2000-2004/PY

FILE 'BIOTECHDS'

108870 2000-2004/PY

L40 24 L28 NOT 2000-2004/PY

FILE 'BIOSIS'

2704904 2000-2004/PY

L41 50 L29 NOT 2000-2004/PY

FILE 'EMBASE'

2374417 2000-2004/PY

L42 48 L30 NOT 2000-2004/PY

FILE 'HCAPLUS'

5119564 2000-2004/PY

L43 63 L31 NOT 2000-2004/PY

FILE 'NTIS'

84699 2000-2004/PY

L44 1 L32 NOT 2000-2004/PY

FILE 'ESBIOBASE'

1464155 2000-2004/PY  
L45 32 L33 NOT 2000-2004/PY

FILE 'BIOTECHNO'  
491187 2000-2004/PY  
L46 42 L34 NOT 2000-2004/PY

FILE 'WPIDS'  
4543700 2000-2004/PY  
L47 0 L35 NOT 2000-2004/PY

TOTAL FOR ALL FILES  
L48 413 L36 NOT 2000-2004/PY

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L49 101 DUP REM L48 (312 DUPLICATES REMOVED)

=> d tot

L49 ANSWER 1 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN DUPLICATE 1  
TI The interaction of carbohydrate-binding modules with insoluble  
non-crystalline cellulose is enthalpically driven  
SO BIOCHEMICAL JOURNAL, (15 JAN 2005) Vol. 385, Part 2, pp. 479-484.  
Publisher: PORTLAND PRESS LTD, 59 PORTLAND PLACE, LONDON W1B 1QW, ENGLAND.  
ISSN: 0264-6021.  
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L49 ANSWER 2 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
TI Dynamic interaction of Trichoderma reesei cellobiohydrolases Cel6A and  
Cel7A and cellulose at equilibrium and during hydrolysis  
SO APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (DEC 1999) Vol. 65, No. 12, pp.  
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Publisher: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW,  
WASHINGTON, DC 20005-4171.  
ISSN: 0099-2240.  
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L49 ANSWER 3 OF 101 MEDLINE on STN DUPLICATE 2  
TI Duplicated Clostridium thermocellum cellobiohydrolase gene encoding  
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SO Applied microbiology and biotechnology, (1999 Jun) 51 (6) 852-9.  
Journal code: 8406612. ISSN: 0175-7598.  
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W L  
AN 1999351130 MEDLINE

L49 ANSWER 4 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
TI Enzymes, energy, and the environment: A strategic perspective on the US  
Department of Energy's Research and Development Activities for Bioethanol  
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Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036.  
ISSN: 8756-7938.  
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L49 ANSWER 5 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
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**binding domains** from *Trichoderma reesei*  
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OXON, ENGLAND.  
ISSN: 0014-2956.  
AU Carrard G (Reprint); Linder M  
AN 1999:512381 SCISEARCH

L49 ANSWER 6 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on  
STN  
TI The type II and X **cellulose-binding domains**  
of *Pseudomonas xylanase* A potentiate catalytic activity against complex  
substrates by a common mechanism  
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Hazlewood G P; Gilbert H J (Reprint)  
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L49 ANSWER 7 OF 101 HCAPLUS COPYRIGHT 2005 ACS on STN  
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cellobiohydrolases from *Trichoderma reesei*  
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Advances in Carbohydrate Bioengineering), 302-308  
CODEN: SROCDQ; ISSN: 0260-6291  
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L49 ANSWER 8 OF 101 MEDLINE on STN DUPLICATE 3  
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L49 ANSWER 9 OF 101 MEDLINE on STN DUPLICATE 4  
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Journal code: 0107600. ISSN: 0014-2956.  
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L49 ANSWER 10 OF 101 MEDLINE on STN DUPLICATE 5  
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L49 ANSWER 11 OF 101 HCAPLUS COPYRIGHT 2005 ACS on STN  
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properties and efficiency in cellulose hydrolysis  
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D. C.  
CODEN: 67GHA6  
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Linder, Markus; Kotiranta, Pia; Tjerneld, Folke; Buchert, Johanna;  
Viikari, Liisa

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L49 ANSWER 12 OF 101 MEDLINE on STN DUPLICATE 6  
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 Journal code: 0155157. ISSN: 0014-5793.  
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L49 ANSWER 13 OF 101 HCAPLUS COPYRIGHT 2005 ACS on STN  
 TI Macromolecular assembly of the clostridium thermocellum cellulosome  
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 CODEN: 67GHA6  
 AU Wu, J. H. D.; Lytle, B. L.; Huynh, J. T.  
 AN 1999:91340 HCAPLUS

L49 ANSWER 14 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Cellulase core proteins from Trichoderma reesei; **binding** properties and efficiency in cellulose hydrolysis; cellobiohydrolase-I and -II and endoglucanase-I and -II for cellulose and kraft pulp hydrolysis (conference abstract)  
 SO Abstr.Pap.Am.Chem.Soc.; (1999) 217 Meet. Pt.1, CELL018  
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L49 ANSWER 15 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Improved immobilization of fusion proteins via **cellulose-binding domains**  
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 ISSN: 0027-8424.  
 AU DIN N; DAMUDE H G; GILKES N R; MILLER R C; WARREN R A J; KILBURN D G  
 (Reprint)  
 AN 94:745024 SCISEARCH

L49 ANSWER 67 OF 101 MEDLINE on STN DUPLICATE 35  
 TI Mutation analysis of the **cellulose-binding**  
**domain** of the *Clostridium cellulovorans* **cellulose-binding**  
 protein A.  
 SO Journal of bacteriology, (1994 Dec) 176 (23) 7328-34.  
 Journal code: 2985120R. ISSN: 0021-9193.  
 AU Goldstein M A; Doi R H  
 AN 95050317 MEDLINE

L49 ANSWER 68 OF 101 MEDLINE on STN DUPLICATE 36  
 TI The **cellulose-binding domain** of  
 endoglucanase A (CenA) from *Cellulomonas fimi*: evidence for the  
 involvement of tryptophan residues in **binding**.  
 SO Molecular microbiology, (1994 Feb) 11 (4) 747-55.  
 Journal code: 8712028. ISSN: 0950-382X.  
 AU Din N; Forsythe I J; Burtnick L D; Gilkes N R; Miller R C Jr; Warren R A;  
 Kilburn D G  
 AN 94254730 MEDLINE

L49 ANSWER 69 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation  
 on STN DUPLICATE 37  
 TI EVIDENCE FOR A GENERAL ROLE FOR HIGH-**AFFINITY** NONCATALYTIC  
**CELLULOSE-BINDING DOMAINS** IN MICROBIAL  
 PLANT-CELL WALL HYDROLASES  
 SO MOLECULAR MICROBIOLOGY, (JAN 1994) Vol. 11, No. 2, pp. 375-382.

ISSN: 0950-382X.

AU MILLWARDSADLER S J; POOLE D M; HENRISSAT B; HAZLEWOOD G P; CLARKE J H;  
GILBERT H J (Reprint)  
AN 94:92854 SCISEARCH

L49 ANSWER 70 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation  
on STN DUPLICATE 38

TI CELLOBIOSE DEHYDROGENASE A HEMOFLAVOENZYME FROM PHANEROCHAETE-  
CHRYSOSPORIUM

SO ACS SYMPOSIUM SERIES, (1994) Vol. 566, pp. 179-187.  
ISSN: 0097-6156.

AU RENGANATHAN V (Reprint); BAO W J  
AN 95:49758 SCISEARCH

L49 ANSWER 71 OF 101 MEDLINE on STN DUPLICATE 39

TI The Clostridium cellulovorans cellulosome.

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Journal code: 8914274. ISSN: 1040-841X.

AU Doi R H; Goldstein M; Hashida S; Park J S; Takagi M  
AN 94361764 MEDLINE

L49 ANSWER 72 OF 101 MEDLINE on STN DUPLICATE 40

TI Role of the interdomain linker peptide of Trichoderma reesei  
cellobiohydrolase I in its interaction with **crystalline  
cellulose**.

SO Journal of biological chemistry, (1993 Oct 5) 268 (28) 20756-61.  
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AU Srisodsuk M; Reinikainen T; Penttila M; Teeri T T  
AN 94012608 MEDLINE

L49 ANSWER 73 OF 101 MEDLINE on STN DUPLICATE 41

TI Disulfide arrangement and functional domains of beta-1,4-endoglucanase E5  
from Thermomonospora fusca.

SO Biochemistry, (1993 Aug 17) 32 (32) 8157-61.  
Journal code: 0370623. ISSN: 0006-2960.

AU McGinnis K; Wilson D B  
AN 93349905 MEDLINE

L49 ANSWER 74 OF 101 MEDLINE on STN DUPLICATE 42

TI Characterization of the **cellulose-binding  
domain** of the Clostridium cellulovorans **cellulose-binding**  
protein A.

SO Journal of bacteriology, (1993 Sep) 175 (18) 5762-8.  
Journal code: 2985120R. ISSN: 0021-9193.

AU Goldstein M A; Takagi M; Hashida S; Shoseyov O; Doi R H; Segel I H  
AN 93388504 MEDLINE

L49 ANSWER 75 OF 101 MEDLINE on STN DUPLICATE 43

TI The cellulosome: the exocellular organelle of Clostridium.

SO Annual review of microbiology, (1993) 47 791-819. Ref: 139  
Journal code: 0372370. ISSN: 0066-4227.

AU Felix C R; Ljungdahl L G  
AN 94079337 MEDLINE

L49 ANSWER 76 OF 101 MEDLINE on STN DUPLICATE 44

TI Visualization of the adsorption of a bacterial endo-beta-1,4-glucanase and  
its isolated **cellulose-binding domain** to  
**crystalline cellulose**.

SO International journal of biological macromolecules, (1993 Dec) 15 (6)  
347-51.

Journal code: 7909578. ISSN: 0141-8130.

AU Gilkes N R; Kilburn D G; Miller R C Jr; Warren R A; Sugiyama J; Chanzy H;  
Henrissat B  
AN 94153798 MEDLINE

L49 ANSWER 77 OF 101 MEDLINE on STN DUPLICATE 45  
 TI Identification of the **cellulose-binding domain**  
 of a Bacillus subtilis endoglucanase distinct from its catalytic domain.  
 SO Bioscience, biotechnology, and biochemistry, (1993 Feb) 57 (2) 260-4.  
 Journal code: 9205717. ISSN: 0916-8451.  
 AU Park J S; Nakamura A; Horinouchi S; Beppu T  
 AN 93214113 MEDLINE

L49 ANSWER 78 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation  
 on STN DUPLICATE 46  
 TI THE NATURE OF THE **CELLULOSE-BINDING DOMAIN**  
 AFFECTS THE ACTIVITIES OF A BACTERIAL ENDOGLUCANASE ON DIFFERENT FORMS OF  
 CELLULOSE  
 SO FEMS MICROBIOLOGY LETTERS, (15 OCT 1993) Vol. 113, No. 2, pp. 211-218.  
 ISSN: 0378-1097.  
 AU COUTINHO J B; GILKES N R; KILBURN D G; WARREN R A J (Reprint); MILLER R C  
 AN 93:666713 SCISEARCH

L49 ANSWER 79 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Three dimensional structure of wild-type and mutant Thermomonospora fusca  
 endocellulase E2 catalytic domains;  
 thermostable cellulase **cellulose-binding**  
**domain** and catalytic domain characterization (conference  
 abstract)  
 SO Abstr.Pap.Am.Chem.Soc.; (1993) 205 Meet., Pt.2, BTEC21  
 CODEN: ACSRAL  
 AU Spezio M; Karplus P A; Taylor J; Wilson D B  
 AN 1993-06517 BIOTECHDS

L49 ANSWER 80 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation  
 on STN  
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 ORGANIZED INTO FUNCTIONAL DOMAINS  
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 ISSN: 0021-9193.  
 AU RAMALINGAM R; BLUME J E; ENNIS H L (Reprint)  
 AN 92:701686 SCISEARCH

L49 ANSWER 81 OF 101 MEDLINE on STN DUPLICATE 47  
 TI The adsorption of a bacterial cellulase and its two isolated domains to  
**crystalline cellulose.**  
 SO Journal of biological chemistry, (1992 Apr 5) 267 (10) 6743-9.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Gilkes N R; Jervis E; Henrissat B; Tekant B; Miller R C Jr; Warren R A;  
 Kilburn D G  
 AN 92202222 MEDLINE

L49 ANSWER 82 OF 101 MEDLINE on STN DUPLICATE 48  
 TI The gene encoding the cellulase (Avicelase) Cell from Streptomyces  
 reticuli and analysis of protein domains.  
 SO Molecular microbiology, (1992 Dec) 6 (23) 3611-21.  
 Journal code: 8712028. ISSN: 0950-382X.  
 AU Schlochtermeier A; Walter S; Schroder J; Moorman M; Schrempf H  
 AN 93116600 MEDLINE

L49 ANSWER 83 OF 101 MEDLINE on STN DUPLICATE 49  
 TI Primary sequence analysis of Clostridium cellulovorans cellulose  
**binding** protein A.  
 SO Proceedings of the National Academy of Sciences of the United States of  
 America, (1992 Apr 15) 89 (8) 3483-7.  
 Journal code: 7505876. ISSN: 0027-8424.  
 AU Shoseyov O; Takagi M; Goldstein M A; Doi R H  
 AN 92228810 MEDLINE

L49 ANSWER 84 OF 101 MEDLINE on STN DUPLICATE 50  
 TI The **binding** of *Cellulomonas fimi* endoglucanase C (CenC) to cellulose and Sephadex is mediated by the N-terminal repeats.  
 SO Molecular microbiology, (1992 May) 6 (9) 1243-52.  
 Journal code: 8712028. ISSN: 0950-382X.  
 AU Coutinho J B; Gilkes N R; Warren R A; Kilburn D G; Miller R C Jr  
 AN 92269585 MEDLINE

L49 ANSWER 85 OF 101 MEDLINE on STN DUPLICATE 51  
 TI Investigation of the function of mutated **cellulose-binding domains** of *Trichoderma reesei* cellobiohydrolase I.  
 SO Proteins, (1992 Dec) 14 (4) 475-82.  
 Journal code: 8700181. ISSN: 0887-3585.  
 AU Reinikainen T; Ruohonen L; Nevanen T; Laaksonen L; Kraulis P; Jones T A; Knowles J K; Teeri T T  
 AN 93066164 MEDLINE

L49 ANSWER 86 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI ANALYSIS OF FUNCTIONAL DOMAINS OF ENDOGLUCANASES FROM CLOSTRIDIUM-CELLULOVRANS BY GENE CLONING, NUCLEOTIDE SEQUENCING AND CHIMERIC PROTEIN CONSTRUCTION  
 SO MOLECULAR & GENERAL GENETICS, (FEB 1992) Vol. 231, No. 3, pp. 472-479.  
 ISSN: 0026-8925.  
 AU HAMAMOTO T; FOONG F; SHOSEYOV O; DOI R H (Reprint)  
 AN 92:127423 SCISEARCH

L49 ANSWER 87 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI The molecular architecture of xylanases from *Pseudomonas fluorescens* subsp. *cellulosa*; endo-1,4-beta-D-xylanase, alpha-L-arabinofuranosidase and acetylerase characterization and gene cloning (conference paper)  
 SO Prog.Biotechnol.; (1992) 7, 259-73  
 CODEN: PBITE3  
 AU Hazlewood G P; Gilbert H J  
 AN 1994-10112 BIOTECHDS

L49 ANSWER 88 OF 101 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Identification of the **cellulose-binding domain** of the cellulosome subunit S1 from *Clostridium thermocellum* YS.  
 SO FEMS (Federation of European Microbiological Societies) Microbiology Letters, (1992) Vol. 99, No. 2-3, pp. 181-186.  
 CODEN: FMLED7. ISSN: 0378-1097.  
 AU Poole, Debbie M.; Morag, Ely; Lamed, Raphael; Bayer, Edward A.; Hazlewood, Geoffrey P.; Gilbert, Harry J. [Reprint author]  
 AN 1993:122258 BIOSIS

L49 ANSWER 89 OF 101 MEDLINE on STN DUPLICATE 52  
 TI Biochemistry and genetics of actinomycete cellulases.  
 SO Critical reviews in biotechnology, (1992) 12 (1-2) 45-63. Ref: 73  
 Journal code: 8505177. ISSN: 0738-8551.  
 AU Wilson D B  
 AN 92127620 MEDLINE

L49 ANSWER 90 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Studies of *Thermomonospora fusca* cellulases; CM-cellulase and cellobiohydrolase purification and characterization, and gene cloning and expression in *Escherichia coli* and *Streptomyces lividans* (conference abstract)  
 SO Abstr.Pap.Am.Chem.Soc.; (1992) 203 Meet., Pt.1, BIOT17  
 CODEN: ACSRAL

AU Lao G; McGinnis K; Spezio M; Wilson D  
AN 1992-08771 BIOTECHDS

L49 ANSWER 91 OF 101 MEDLINE on STN DUPLICATE 53  
TI The cellodextrinase from *Pseudomonas fluorescens* subsp. *cellulosa* consists of multiple functional domains.  
SO Biochemical journal, (1991 Nov 1) 279 ( Pt 3) 793-9.  
Journal code: 2984726R. ISSN: 0264-6021.  
AU Ferreira L M; Hazlewood G P; Barker P J; Gilbert H J  
AN 92061996 MEDLINE

L49 ANSWER 92 OF 101 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
TI ENGINEERING OF ENZYMES OF CARBOHYDRATE-METABOLISM  
SO CURRENT OPINION IN BIOTECHNOLOGY, (1991) Vol. 2, No. 4, pp. 614-621.  
AU TEERI T T (Reprint)  
AN 91:541856 SCISEARCH

L49 ANSWER 93 OF 101 MEDLINE on STN DUPLICATE 54  
TI The non-catalytic C-terminal region of endoglucanase E from *Clostridium thermocellum* contains a **cellulose-binding domain**.  
SO Biochemical journal, (1991 Jan 15) 273(Pt 2) 289-93.  
Journal code: 2984726R. ISSN: 0264-6021.  
AU Durrant A J; Hall J; Hazlewood G P; Gilbert H J  
AN 91119553 MEDLINE

L49 ANSWER 94 OF 101 MEDLINE on STN DUPLICATE 55  
TI The 1,4-beta-D-glucan cellobiohydrolases from *Phanerochaete chrysosporium*. I. A system of synergistically acting enzymes homologous to *Trichoderma reesei*.  
SO Journal of biotechnology, (1991 Jul) 19 (2-3) 271-85.  
Journal code: 8411927. ISSN: 0168-1656.  
AU Uzcategui E; Ruiz A; Montesino R; Johansson G; Pettersson G  
AN 91273927 MEDLINE

L49 ANSWER 95 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
TI Purification and characterization of fungal cellulases; cellulase complex isolation from *Fusarium*, *Humicola* and *Mycelophthera* spp. (conference abstract)  
SO Abstr.Pap.Am.Chem.Soc.; (1991) 202 Meet., Pt.1, BIOT187  
CODEN: ACSRAL  
AU Schuelein M; Schou C; Rasmussen G  
AN 1991-14350 BIOTECHDS

L49 ANSWER 96 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
TI How do *Trichoderma reesei* cellobiohydrolases bind to and degrade cellulose (query); cellobiohydrolase and cellulase characterization (conference abstract)  
SO Abstr.Pap.Am.Chem.Soc.; (1991) 202 Meet., Pt.1, BIOT206  
CODEN: ACSRAL  
AU Reinikainen T R; Ruohonen L; Koivula A; Srisodsuk M; Jones A; Knowles J K  
AN 1991-14356 BIOTECHDS

L49 ANSWER 97 OF 101 MEDLINE on STN DUPLICATE 56  
TI The N-terminal region of an endoglucanase from *Pseudomonas fluorescens* subspecies *cellulosa* constitutes a **cellulose-binding domain** that is distinct from the catalytic centre.  
SO Molecular microbiology, (1990 May) 4 (5) 759-67.  
Journal code: 8712028. ISSN: 0950-382X.  
AU Gilbert H J; Hall J; Hazlewood G P; Ferreira L M  
AN 90355836 MEDLINE



L49 ANSWER 98 OF 101 MEDLINE on STN DUPLICATE 57  
 TI Xylanase B and an arabinofuranosidase from *Pseudomonas fluorescens* subsp. *cellulosa* contain identical **cellulose-binding domains** and are encoded by adjacent genes.  
 SO Biochemical journal, (1990 Dec 1) 272 (2) 369-76.  
 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Kellett L E; Poole D M; Ferreira L M; Durrant A J; Hazlewood G P; Gilbert H J  
 AN 91097447 MEDLINE

L49 ANSWER 99 OF 101 MEDLINE on STN DUPLICATE 58  
 TI Spatial separation of protein domains is not necessary for catalytic activity or substrate **binding** in a xylanase.  
 SO Biochemical journal, (1990 Jul 1) 269 (1) 261-4.  
 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Ferreira L M; Durrant A J; Hall J; Hazlewood G P; Gilbert H J  
 AN 90328982 MEDLINE

L49 ANSWER 100 OF 101 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Structural and functional aspects of cellulases from a cellulolytic bacterium;  
 Cellulomonas fimi cellulase characterization (conference abstract)  
 SO Abstr.Pap.Am.Chem.Soc.; (1989) 198 Meet., MBTD40  
 CODEN: ACSRAL  
 AU Gilkes N R; Kilburn D G; Miller Jr R C; Warren R A J  
 AN 1990-00472 BIOTECHDS

L49 ANSWER 101 OF 101 NTIS COPYRIGHT 2005 NTIS on STN  
 TI Computer-Aided Protein Modelling: Applications to Antibody and Enzyme Engineering. Thesis.  
 NR PB95-129706/XAB; VTT/PUB-185, ISBN-951-38-4623-7  
 148p; c1994  
 AU Hoffren, A. M.  
 AN 1995(14):05754 NTIS

=> s humicola insolens  
 FILE 'MEDLINE'  
 282 HUMICOLA  
 64 INSOLENS  
 L50 60 HUMICOLA INSOLENS  
 (HUMICOLA (W) INSOLENS)

FILE 'SCISEARCH'  
 659 HUMICOLA  
 126 INSOLENS  
 L51 114 HUMICOLA INSOLENS  
 (HUMICOLA (W) INSOLENS)

FILE 'LIFESCI'  
 352 "HUMICOLA"  
 56 "INSOLENS"  
 L52 43 HUMICOLA INSOLENS  
 ("HUMICOLA" (W) "INSOLENS")

FILE 'BIOTECHDS'  
 613 HUMICOLA  
 120 INSOLENS  
 L53 118 HUMICOLA INSOLENS  
 (HUMICOLA (W) INSOLENS)

FILE 'BIOSIS'  
 1157 HUMICOLA  
 205 INSOLENS

L54            147 HUMICOLA INSOLENS  
                  (HUMICOLA (W) INSOLENS)

FILE 'EMBASE'  
                  303 "HUMICOLA"  
                  55 "INOLENS"  
L55            55 HUMICOLA INSOLENS  
                  ("HUMICOLA" (W) "INOLENS")

FILE 'HCAPLUS'  
                  1359 HUMICOLA  
                  303 INOLENS  
L56            289 HUMICOLA INSOLENS  
                  (HUMICOLA (W) INSOLENS)

FILE 'NTIS'  
                  4 HUMICOLA  
                  0 INOLENS  
L57            0 HUMICOLA INSOLENS  
                  (HUMICOLA (W) INSOLENS)

FILE 'ESBIOBASE'  
                  235 HUMICOLA  
                  60 INOLENS  
L58            54 HUMICOLA INSOLENS  
                  (HUMICOLA (W) INSOLENS)

FILE 'BIOTECHNO'  
                  227 HUMICOLA  
                  44 INOLENS  
L59            42 HUMICOLA INSOLENS  
                  (HUMICOLA (W) INSOLENS)

FILE 'WPIDS'  
                  371 HUMICOLA  
                  100 INOLENS  
L60            83 HUMICOLA INSOLENS  
                  (HUMICOLA (W) INSOLENS)

TOTAL FOR ALL FILES  
L61            1005 HUMICOLA INSOLENS

=> s 112 and 161

FILE 'MEDLINE'  
L62            5 L1 AND L50

FILE 'SCISEARCH'  
L63            12 L2 AND L51

FILE 'LIFESCI'  
L64            6 L3 AND L52

FILE 'BIOTECHDS'  
L65            16 L4 AND L53

FILE 'BIOSIS'  
L66            9 L5 AND L54

FILE 'EMBASE'  
L67            7 L6 AND L55

FILE 'HCAPLUS'  
L68            32 L7 AND L56

FILE 'NTIS'  
 L69 0 L8 AND L57  
  
 FILE 'ESBIOBASE'  
 L70 7 L9 AND L58  
  
 FILE 'BIOTECHNO'  
 L71 7 L10 AND L59  
  
 FILE 'WPIDS'  
 L72 14 L11 AND L60  
  
 TOTAL FOR ALL FILES  
 L73 115 L12 AND L61  
  
 => s l73 not 2000-2005/py  
 FILE 'MEDLINE'  
 2868042 2000-2005/PY  
 L74 5 L62 NOT 2000-2005/PY  
  
 FILE 'SCISEARCH'  
 5407808 2000-2005/PY  
 L75 6 L63 NOT 2000-2005/PY  
  
 FILE 'LIFESCI'  
 536082 2000-2005/PY  
 L76 4 L64 NOT 2000-2005/PY  
  
 FILE 'BIOTECHDS'  
 112848 2000-2005/PY  
 L77 12 L65 NOT 2000-2005/PY  
  
 FILE 'BIOSIS'  
 2729806 2000-2005/PY  
 L78 5 L66 NOT 2000-2005/PY  
  
 FILE 'EMBASE'  
 2477748 2000-2005/PY  
 L79 5 L67 NOT 2000-2005/PY  
  
 FILE 'HCAPLUS'  
 5370259 2000-2005/PY  
 L80 11 L68 NOT 2000-2005/PY  
  
 FILE 'NTIS'  
 85025 2000-2005/PY  
 L81 0 L69 NOT 2000-2005/PY  
  
 FILE 'ESBIOBASE'  
 1535212 2000-2005/PY  
 L82 5 L70 NOT 2000-2005/PY  
  
 FILE 'BIOTECHNO'  
 491187 2000-2005/PY  
 L83 5 L71 NOT 2000-2005/PY  
  
 FILE 'WPIDS'  
 4695517 2000-2005/PY  
 L84 3 L72 NOT 2000-2005/PY  
  
 TOTAL FOR ALL FILES  
 L85 61 L73 NOT 2000-2005/PY  
  
 => s (binding or affinity) and l61 and l24

FILE 'MEDLINE'  
713408 BINDING  
190697 AFFINITY  
L86 2 (BINDING OR AFFINITY) AND L50 AND L13

FILE 'SCISEARCH'  
660278 BINDING  
160713 AFFINITY  
L87 7 (BINDING OR AFFINITY) AND L51 AND L14

FILE 'LIFESCI'  
224554 BINDING  
67253 AFFINITY  
L88 1 (BINDING OR AFFINITY) AND L52 AND L15

FILE 'BIOTECHDS'  
35688 BINDING  
14608 AFFINITY  
L89 1 (BINDING OR AFFINITY) AND L53 AND L16

FILE 'BIOSIS'  
624533 BINDING  
203250 AFFINITY  
L90 2 (BINDING OR AFFINITY) AND L54 AND L17

FILE 'EMBASE'  
620399 BINDING  
194894 AFFINITY  
L91 2 (BINDING OR AFFINITY) AND L55 AND L18

FILE 'HCAPLUS'  
864414 BINDING  
273178 AFFINITY  
L92 2 (BINDING OR AFFINITY) AND L56 AND L19

FILE 'NTIS'  
9761 BINDING  
2473 AFFINITY  
L93 0 (BINDING OR AFFINITY) AND L57 AND L20

FILE 'ESBIOBASE'  
237852 BINDING  
71019 AFFINITY  
L94 2 (BINDING OR AFFINITY) AND L58 AND L21

FILE 'BIOTECHNO'  
277750 BINDING  
87816 AFFINITY  
L95 1 (BINDING OR AFFINITY) AND L59 AND L22

FILE 'WPIDS'  
103969 BINDING  
28766 AFFINITY  
L96 1 (BINDING OR AFFINITY) AND L60 AND L23

TOTAL FOR ALL FILES  
L97 21 (BINDING OR AFFINITY) AND L61 AND L24

=> dup rem l97  
PROCESSING COMPLETED FOR L97  
L98 8 DUP REM L97 (13 DUPLICATES REMOVED)

=> d tot

L98 ANSWER 1 OF 8 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Protein disorder: Conformational distribution of the flexible linker in a chimeric double cellulase  
 SO BIOPHYSICAL JOURNAL, (APR 2005) Vol. 88, No. 4, pp. 2823-2832.  
 Publisher: BIOPHYSICAL SOCIETY, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3998 USA.  
 ISSN: 0006-3495.  
 AU von Ossowski I; Eaton J T; Czjzek M; Perkins S J; Frandsen T P; Schulein M; Panine P; Henrissat B; Receveur-Brechot V (Reprint)  
 AN 2005:368699 SCISEARCH

L98 ANSWER 2 OF 8 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Dimension, shape, and conformational flexibility of a two domain fungal cellulase in solution probed by small angle X-ray scattering  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (25 OCT 2002) Vol. 277, No. 43, pp. 40887-40892.  
 Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3996 USA.  
 ISSN: 0021-9258.  
 AU Receveur W (Reprint); Czjzek M; Schulein M; Panine P; Henrissat B  
 AN 2002:890802 SCISEARCH

L98 ANSWER 3 OF 8 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN  
 TI Chemical entities for fabric care comprises chemical components linked to a cellulose **binding** domain which has specified **binding** constants;  
 also claimed are a laundry surfactant and/or fabric care composition  
 AU Smets J; Baeck A C; Busch A; Boyer S L  
 AN 2000-09604 BIOTECHDS  
 PI WO 2000018898 6 Apr 2000

L98 ANSWER 4 OF 8 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Site-directed mutation of noncatalytic residues of Thermobifida fusca exocellulase Cel6B  
 SO EUROPEAN JOURNAL OF BIOCHEMISTRY, (JUN 2000) Vol. 267, No. 11, pp. 3101-3115.  
 Publisher: BLACKWELL SCIENCE LTD, P O BOX 88, OSNEY MEAD, OXFORD OX2 ONE, OXON, ENGLAND.  
 ISSN: 0014-2956.  
 AU Zhang S; Irwin D C; Wilson D B (Reprint)  
 AN 2000:426350 SCISEARCH

L98 ANSWER 5 OF 8 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Effects of agitation level on the adsorption, desorption, and activities on cotton fabrics of full length and core domains of EGV (**Humicola insolens**) and CenA (*Cellulomonas fimi*)  
 SO ENZYME AND MICROBIAL TECHNOLOGY, (AUG 2000) Vol. 27, No. 3-5, pp. 325-329.  
 Publisher: ELSEVIER SCIENCE INC, 655 AVENUE OF THE AMERICAS, NEW YORK, NY 10010.  
 ISSN: 0141-0229.  
 AU Azevedo H; Bishop D; CavacoPaulo A (Reprint)  
 AN 2000:557549 SCISEARCH

L98 ANSWER 6 OF 8 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN  
 TI Protein engineering of cellulases  
 SO BIOCHIMICA ET BIOPHYSICA ACTA-PROTEIN STRUCTURE AND MOLECULAR ENZYMOLOGY, (29 DEC 2000) Vol. 1543, No. 2, Sp. iss. SI, pp. 239-252.  
 Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.

ISSN: 0167-4838.

AU Schulein M (Reprint)  
AN 2001:95302 SCISEARCH

L98 ANSWER 7 OF 8 MEDLINE on STN DUPLICATE 2  
TI Structure and function of **Humicola insolens** family 6  
cellulases: structure of the endoglucanase, Cel6B, at 1.6 A resolution.  
SO Biochemical journal, (2000 May 15) 348 Pt 1 201-7.  
Journal code: 2984726R. ISSN: 0264-6021.  
AU Davies G J; Brzozowski A M; Dauter M; Varrot A; Schulein M  
AN 2000256782 MEDLINE

L98 ANSWER 8 OF 8 MEDLINE on STN DUPLICATE 3  
TI Structural changes of the active site tunnel of **Humicola**  
**insolens** cellobiohydrolase, Cel6A, upon oligosaccharide  
**binding**.  
SO Biochemistry, (1999 Jul 13) 38 (28) 8884-91.  
Journal code: 0370623. ISSN: 0006-2960.  
AU Varrot A; Schulein M; Davies G J  
AN 1999343913 MEDLINE

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

294.74

294.95

STN INTERNATIONAL LOGOFF AT 14:07:29 ON 21 APR 2005

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1202	cellulose binding domain or cbd	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:32
L2	6685	crystalline cellulose	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L3	39897	binding constant or high affinity or affinity constant	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L4	15	2 same 3	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L5	11	1 and 4	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L6	1214	humicola insolens	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:34
L7	37	6 same 1	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:42
L8	2	4 and 6	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:42

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1202	cellulose binding domain or cbd	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:32
L2	6685	crystalline cellulose	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L3	39897	binding constant or high affinity or affinity constant	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L4	15	2 same 3	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L5	11	1 and 4	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:33
L6	1214	humicola insolens	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:34
L7	37	6 same 1	US-PGPUB; USPAT	ADJ	OFF	2005/04/21 13:34



PGPUB-DOCUMENT-NUMBER: 20050070003

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050070003 A1

TITLE: Endoglucanases

PUBLICATION-DATE: March 31, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schulein, Martin	Copenhagen		DK	
Henriksen, Torben	Copenhagen		DK	
Andersen, Lene Nonboe	Allerod		DK	
Lassen, Soren Flensted	Kobenhavn N		DK	
Kauppinen, Markus Sakari	Kobenhavn N		DK	
Lange, Lene	Valby		DK	
Nielsen, Ruby Ilum	Farum		DK	
Takagi, Shinobu	Ichikawa-shi		JP	
Ihara, Michiko	Chiba-shi		JP	

APPL-NO: 10/ 965499

DATE FILED: October 14, 2004

RELATED-US-APPL-DATA:

child 10965499 A1 20041014

parent continuation-of 10007521 20011210 US GRANTED

parent-patent 6855531 US

child 10007521 20011210 US

parent continuation-of 09229911 19990113 US GRANTED

parent-patent 6387690 US

child 09229911 19990113 US

parent division-of 08651136 19960521 US GRANTED

parent-patent 6001639 US

child 08651136 19960521 US

parent continuation-of PCT/DK96/00105 19960318 US UNKNOWN

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DK	0272/95	1995DK-0272/95	March 17, 1995
DK	0885/95	1995DK-0885/95	August 8, 1995
DK	0886/95	1995DK-0886/95	August 8, 1995
DK	0887/95	1995DK-0887/95	August 8, 1995
JP	0888/95	1995JP-0888/95	August 8, 1995
JP	0137/96	1996JP-0137/96	February 12, 1996

US-CL-CURRENT: 435/209

#### ABSTRACT:

The present invention relates to enzyme preparations consisting essentially of an enzyme which has cellulytic activity and comprises a first amino acid sequence having the following sequence 1 (SEQ ID NO: 79) Thr Arg Xaa Xaa Asp Cys Cys Xaa Xaa Xaa Cys Xaa Trp Xaa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 and a second amino acid sequence having the following sequence 2 Trp Cys Cys Xaa Cys (SEQ ID NO: 80) 1 2 3 4 5

wherein, at position 3 of the first sequence, the amino acid is Trp, Tyr or Phe; at position 4 of the first sequence, the amino acid is Trp, Tyr or Phe; at position 8 of the first sequence, the amino acid is Arg, Lys or His; at positions 9, 10, 12 and 14, respectively, of the first sequence, and at position 4 of the second sequence, the amino acid is any of the 20 naturally occurring amino acid residues with the provisos that, in the first amino acid sequence, (i) when the amino residue at position 12 is Ser, then the amino acid residue at position 14 is not Ser, and (ii) when the amino residue at position 12 is Gly, then the amino acid residue at position 14 is not Ala, performs very well in industrial applications such as laundry compositions, for biopolishing of newly manufactured textiles, for providing an abraded look of cellulosic fabric or garment, and for treatment of paper pulp. Further, the invention relates to DNA constructs encoding such enzymes, a method for providing a gene encoding for such enzymes, a method of producing the enzymes, enzyme preparations containing such enzymes, and the use of these enzymes for a number of industrial applications.

#### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. application Ser. No. 10/007,521 filed Dec. 10, 2001, which is a continuation of U.S. application Ser. No. 09/229,911 filed Jan. 13, 1999, now U.S. Pat. No. 6,387,690, which is a division of U.S. application Ser. No. 08/651,136 filed May 21, 1996, now U.S. Pat. No. 6,001,639, which is a continuation of international application no. PCT/DK96/00105 filed Mar. 18, 1996, which claims priority under 35 U.S.C. 119 of Danish application nos. 0272/95, 0885/95, 0886/95, 0887/95, 0888/95, and 0137/96 filed Mar. 17, 1995, Aug. 8, 1995, Aug. 8, 1995, Aug. 8, 1995, Aug. 8, 1995 and Feb. 12, 1996, respectively, the contents of which are fully incorporated herein by reference.

----- KWIC -----

#### Detail Description Paragraph - DETX (701):

[0729] Construction of Two Gene Fusions Between the Endoglucanase from *Crinipellis scabella* and the Linker/CBD Region of the 43 kDa Endoglucanase from *Humicola insolens*.

#### Detail Description Paragraph - DETX (702):

[0730] The native endoglucanase from *Crinipellis scabella* neither has a linker nor a cellulose binding domain (CBD). In addition, the full-length cDNA contains an ATG start codon upstream from the endoglucanase encoding open reading frame (ORF), presumably resulting in scrambled translation initiation upon heterologous expression of the cDNA, such as in the yeast *Saccharomyces cerevisiae* and the filamentous fungus *Aspergillus oryzae*. Thus, two gene fusions between the endoglucanase from *Crinipellis scabella* and the linker/CBD region of the 43 kD endoglucanase from *Humicola insolens* (disclosed in WO 91/17243) has been constructed using splicing by overlap extension (SOE)

(Horton et al, 1989).

Detail Description Paragraph - DETX (708):

[0736] The recombinant hybrid genes between the endoglucanase from *Crinipellis scabellia* and the linker/CBD region of the 43 kD endoglucanase from *Humicola insolens* were generated by combining the overlapping PCR fragments from above (ca. 50 ng of each template) in two combinations in PCR buffer (10 mM Tris-HCl, pH 8.3, 50 mM KCl, 1.5 mM MgCl<sub>2</sub>, 0.01% gelatin; containing 200 micro-M each dNTP). The SOE reaction was carried out using the DNA thermal cycler (Landgraf, Germany) and 2.5 units of Taq polymerase (Perkin-Elmer, Cetus, USA). Two cycles of PCR were performed using a cycle profile of denaturation at 94.degree. C. for 1 min, annealing at 55.degree. C. for 2 min, and extension at 72.degree. C. for 3 min, the reaction was stopped, 250 pmol of each end-primer (forward no.15'-CCCCAAGCTTGACTTGGAACCAATGGTCCATCC-3' (SEQ ID NO: 98), forward no.2 5'-CCCCAAGCTTCCATCCAAACATGCTTAAAACGCTCG-3' (SEQ ID NO: 99), reverse primer 5'-GGGCGTGAATGTAAGCGTGACATA-3' (SEQ ID NO: 101)) was added to the reaction mixture, and an additional 30 cycles of PCR were performed using a cycle profile of denaturation at 94.degree. C. for 1 min, annealing at 55.degree. C. for 2 min, and extension at 72.degree. C. for 3 min.

PGPUB-DOCUMENT-NUMBER: 20040185498

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040185498 A1

TITLE: Novel cellulases, the genes encoding them and uses thereof

PUBLICATION-DATE: September 23, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Miettinen-Oinonen, Arja	Masala		FI	
Londesborough, John	Helsinki		FI	
Vehmaanpera, Jari	Klaukkala		FI	
Haakana, Heli	Espoo		FI	
Mantyla, Arja	Helsinki		FI	
Lantto, Raija	Klaukkala		FI	
Elovainio, Minna	Helsinki		FI	
Joutsjoki, Vesa	Jokioinen		FI	
Paloheimo, Marja	Vantaa		FI	
Suominen, Pirkko	Helsinki		FI	

APPL-NO: 10/ 825378

DATE FILED: April 16, 2004

RELATED-US-APPL-DATA:

child 10825378 A1 20040416

parent division-of 08841636 19970430 US GRANTED

parent-patent 6723549 US

child 08841636 19970430 US

parent continuation-of PCT/FI96/00550 19961017 US UNKNOWN

child 08841636 19970430 US

parent continuation-in-part-of 08732181 19961016 US ABANDONED

non-provisional-of-provisional 60005335 19951017 US

non-provisional-of-provisional 60007926 19951204 US

non-provisional-of-provisional 60020840 19960628 US

US-CL-CURRENT: 435/6, 435/209, 435/320.1, 435/325, 435/69.1, 536/23.2

ABSTRACT:

Genes encoding novel cellulases, and a gene encoding a protein that facilitates the action of such novel cellulases, the novel cellulases and a protein that facilitates the action of such cellulases, and enzyme preparations containing such proteins are described. The native hosts and the culture medium of said

hosts containing said novel cellulases are also disclosed. These proteins are especially useful in the textile and detergent industry and in pulp and paper industry.

----- KWIC -----

Detail Description Paragraph - DETX (282):

[0300] The 20K-cellulase of *Melanocarpus albomyces* appears to belong to family K of cellulases and family 45 of glycosyl hydrolases (Henrissat & Bairoch, *Biochem. J.* 293:781-788 (1993)). The 20K-cellulase shows homology (about 76% identify in 235 amino acid overlap) towards the *Humicola insolens* endoglucanase V (embl:a23635), but the 20K-cellulase has the surprising feature that it does not harbor the cellulose binding domain (CBD) and its linker, which are characteristic of the *Humicola insolens* endoglucanase V and other related endoglucanases (Schulein et al., 1993, In: Suominen & Reinikainen (eds), *Foundation for Biotechnical and Industrial Fermentation Research*, Helsinki, vol. 8, 109.; Saloheimo et al., 1994, *Mol. Microbiol.* 13, 219). This feature of the 20K-cellulase may account for the excellent performance of the enzyme in biostoning experiments (Example 10).

US-PAT-NO: 6855531

DOCUMENT-IDENTIFIER: US 6855531 B2

TITLE: Endoglucanases

DATE-ISSUED: February 15, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shulein; Martin	late of Copenhagen	N/A	N/A	DK
Henriksen; Torben	Copenhagen	N/A	N/A	DK
Lassen; S.o slashed.ren	Kobenhavn N	N/A	N/A	DK
Flensted	Kobenhavn N	N/A	N/A	DK
Kauppinen; Markus Sakari				

APPL-NO: 10/ 007521

DATE FILED: December 10, 2001

PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of application Ser. No. 09/229,911 filed Jan. 13, 1999, now U.S. Pat. No. 6,387,690, which is a divisional of application Ser. No. 08/651,136 filed May 21, 1996, now U.S. Pat. No. 6,001,639 which is a continuation of PCT/DK96/00105 filed Mar. 18, 1996, and claims priority under 35 U.S.C. 119 of Danish application Nos. 0272/95, 0888/95, 0887/95, 0886/95, 0885/95 and 0137/96 filed on Mar. 17, 1995, Aug. 8, 1995, Aug. 8, 1995, Aug. 8, 1995, Aug. 8, 1995, and Feb. 12, 1996, respectively,

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DK	0272/95	March 17, 1995
DK	0885/95	August 8, 1995
DK	0886/95	August 8, 1995
DK	0887/95	August 8, 1995
DK	0888/95	August 8, 1995
DK	0137/96	February 12, 1996

US-CL-CURRENT: 435/209, 435/263 , 435/264 , 510/320 , 510/321 , 536/23.2

ABSTRACT:

The present invention relates to enzyme preparations consisting essentially of an enzyme which has cellulytic activity and comprises a first amino acid sequence having the following sequence

(SEQ ID NO:79) Thr Arg Xaa Xaa Asp Cys Cys Xaa Xaa 1 2 3 4 5 6 7 8 9 Xaa  
Cys Xaa Trp Xaa 10 11 12 13 14

and a second amino acid sequence having the following sequence

Trp Cys Cys Xaa Cys (SEQ ID NO:80) 1 2 3 4 5

wherein, at position 3 of the first sequence, the amino acid is Trp, Tyr or Phe; at position 4 of the first sequence, the amino acid is Trp, Tyr or Phe; at position 8 of the first sequence, the amino acid is Arg, Lys or His; at positions 9, 10, 12 and 14, respectively, of the first sequence, and at position 4 of the second sequence, the amino acid is any of the 20 naturally occurring amino acid residues with the provisos that, in the first amino acid sequence, (i) when the amino residue at position 12 is Ser, then the amino acid residue at position 14 is not Ser, and (ii) when the amino residue at position 12 is Gly, then the amino acid residue at position 14 is not Ala, performs very good in industrial applications such as laundry compositions, for biopolishing of newly manufactured textiles, for providing an abraded look of cellulosic fabric or garment, and for treatment of paper pulp. Further, the invention relates to DNA constructs encoding such enzymes, a method for providing a gene encoding for such enzymes, a method of producing the enzymes, enzyme preparations containing such enzymes, and the use of these enzymes for a number of industrial applications.

20 Claims, 8 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 8

----- KWIC -----

Detailed Description Text - DETX (507):

Construction of Two Gene Fusions Between the Endoglucanase from *Crinipellis scabella* and the Linker/CBD Region of the 43 kDa Endoglucanase from *Humicola insolens*

Detailed Description Text - DETX (508):

The native endoglucanase from *Crinipellis scabella* neither has a linker nor a cellulose binding domain (CBD). In addition, the full-length cDNA contains an ATG start codon upstream from the endoglucanase encoding open reading frame (ORF), presumably resulting in scrambled translation initiation upon heterologous expression of the cDNA, such as in the yeast *Saccharomyces cerevisiae* and the filamentous fungus *Aspergillus oryzae*. Thus, two gene fusions between the endoglucanase from *Crinipellis scabella* and the linker/CBD region of the 43 kD endoglucanase from *Humicola insolens* (disclosed in WO 91/17243) has been constructed using splicing by overlap extension (SOE) (Horton et al, 1989).

Detailed Description Text - DETX (515):

The recombinant hybrid genes between the endoglucanase from *Crinipellis scabella* and the linker/CBD region of the 43 kD endoglucanase from *Humicola insolens* were generated by combining the overlapping PCR fragments from above (ca. 50 ng of each template) in two combinations in PCR buffer (10 mM Tris-HCl, pH 8.3, 50 mM KCl, 1.5 mM MgCl<sub>2</sub>.sub.2, 0.01% gelatin; containing 200 .mu.M each dNTP). The SOE reaction was carried out using the DNA thermal cycler (Landgraf, Germany) and 2.5 units of Taq polymerase (Perkin-Elmer, Cetus, USA). Two cycles of PCR were performed using a cycle profile of denaturation at 94.degree. C. for 1 min, annealing at 55.degree. C. for 2 min, and extension at 72.quadrature. C. for 3 min, the reaction was stopped, 250 pmol of each end-primer